

**Before the
Federal Communication Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Connect America Fund)	WC Docket No. 10-90
)	
A National Broadband Plan for Our Future)	GN Docket N). 09-51
)	
Establishing Just and Reasonable Rates for Local)	WC Docket N). 07-135
Exchange Carriers)	
)	
High-Cost Universal Service Support)	WC Docket N). 05-337
)	
Developing an Unified Intercarrier Compensation)	CC Docket N). 01-92
Regime)	
)	
Federal-State Joint Board on Universal Service)	CC Docket No. 96-45
)	
Lifeline and Link-Up)	WC Docket N). 03-109

**Comments of the
Internet2 Ad Hoc Health Group
April 14, 2011**

Connect America Fund (CAF) NPRM Healthcare-related Comments

The Internert2 Ad Hoc Health Group is a community that focuses on meeting the needs of the larger health community through the effective use of communication networks. These comments were developed by our community in response to the proposed Connect America Fund (“CAF”) and the implications of the proposed program on the health community.

Overall, we believe that CAF complement but not supplant or replace the Rural Health Care Program (RHC). The RHC, through the RHC pilot program, has increasingly focused on fostering the development of state and regional health care networks. Such networks are the key to driving demand for increased connectivity for health care and fostering adoption of the life saving, life enhancing, and cost saving technologies that are possible with increased connectivity. To the extent a properly designed CAF delivers increased availability of high bandwidth services in their communities, this will be welcomed by such state and regional networks. However the Commission rules, networks must be empowered to determine the type of infrastructure and services they require in order to meet the level and quality of connectivity required by their members and customers.

149: Synergies across USF programs and serving anchor institutions

“We also seek comment on how USF can best achieve synergies with the connectivity objectives articulated for schools, libraries, and rural health care facilities in section 254. Where build out is required to connect these particular types of community anchor institutions—for example, through the construction of lateral connections to regional fiber networks—should this construction be supported through the CAF, E-Rate, or Rural Health Care programs, individually or in combination? Would such a requirement complement or overlap any goals or requirements of those programs? Should USF recipients have any obligations to serve anchor institutions, such as health care facilities or community centers, in the communities in which they serve residential customers? On the one hand, we recognize the critical importance of ensuring adequate access to broadband infrastructure for community anchor institutions and recognize the value of specialized programs tailored to the unique needs of particular anchor institutions. On the other hand, splitting infrastructure and/or service funding among different programs that serve discrete types of institutions may forego potential efficiencies from aggregating funding for multi-use broadband networks.

Recommendations:

- The CAF should provide support for all providers of broadband and not just carriers
- The FCC should ensure that the broadband of health care are met expeditiously

- The FCC should coordinate with NIST and HHS to address the perceived security and privacy concerns of shared broadband facilities

Discussion:

The goal of ensuring that high speed, reliable networking is in place to support the Community Anchor Institutions and health institutions in particular is strongly endorsed by this community. However, there are several concerns that must be addressed on the way to accomplishing this goal.

The program cannot be solely focused on the support of carriers. In many locations across the country municipal governments and common interest groups have come together to create community networks. For example, in western Wisconsin, the Chippewa Valley Internetworking Consortium (CINC) connects schools, libraries, governments as well as health institutions. Organizations such as CINC understand the needs of the community and how most quickly and effectively to provide the needed networking infrastructure. These activities should be encouraged.

Also, in spite of the many bureaucratic problems associated with FCC's own Rural Health Pilot Program, it has been wonderfully successful in those places it was allowed to move forward to meet its goals. In just three examples Iowa, California and Colorado, more than 600 health sites will have access to broadband locally, regionally and nationally this year.

The RHC pilot program has also demonstrated how the development of shared broadband infrastructure can be fostered. By allowing regional and statewide health care networks to either lease existing facilities or, where cost effective, to construct their own facilities with excess capacity, the pilot program is creating broadband infrastructure that is serving the wider rural community surrounding the anchor institutions. For example, the Oregon Health Network (OHN) through its leased connection model, has stimulated service providers to lay fiber to remote areas across the state and into communities that have never before had broadband. These providers are now able to serve non-health care customers in those wider communities. The Southern Ohio Health Care Network has taken a similar approach that will result in increased broadband services in rural communities in their southern Ohio service area.

Finally, the Health Information Exchange of Montana is constructing fiber facilities with excess capacity in the rural and frontier areas in the northwest of that state. A growing number of local commercial providers are taking advantage of opportunities to lease this excess capacity to enhance the scope and redundancy of their own networks. In turn they are able to bring more and better services to rural and frontier communities in the state while at the same time helping to sustain the HIEM.

These are important advances for the health community that open up efficiencies in the health care processes by allowing the effective sharing of information such

as images such as in the radiology hub in western Wisconsin and the ability to truly share expertise such as in the neo-natal facilities at Nationwide Children's Hospital in Columbus, OH. (<http://www.nationwidechildrens.org/neonatal-telemedicine>)

It is important to recognize the need for this networking across all health organizations is immediate. The Federal Government through HHS / ONC has recognized this need and though CMS put in place financial incentives through 'meaningful use' to encourage the effective use of Health Information Technology to share information and improve the quality and efficiency of care provision in the US. It is troubling that HHS has to consider offering exemptions from these improvements because of the inability of some providers to participate due to lack of adequate broadband resources.

Also the existence of regulations such as the Health Information Portability and Accountability Act (HIPAA) have placed such importance on the security and privacy of identifiable health information, there is a strong perception in the health community that separate networks are requisite to meet these regulations. While the Internet2 Ad Hoc Health Community understands that this concern is at least partially misplaced, we represent a small minority of the greater health community. HHS/ONC, NIST and others are working to overcome these perceived barriers. However, until these perceptions are overcome, there may be significant reticence on the part of many health organizations to participate in multi-use 'community' networks. The FCC should be a proactive participant in these actions and work to meet the needs of the health community.

Because the need for broadband capabilities that meet the unique needs of health care providers is immediate and urgent, there is strong concern about further delaying meaningful reform of the Rural Health Care program. If it is more expedient to meet the immediate needs of the Health Community through the existing (and proposed) Rural Health Program, then that path should be retained at least until it can be demonstrated that the CAF is operating efficiently enough to meet the urgent health needs. This also meets the perceived need to conform to the regulations such as HIPAA. Networks created using the Rural Health program could readily become community networks as the security and privacy issues are addressed primarily through education.

CAF needs to support the Community Area Network (CAN) model to advance connectivity in unserved rural and small town areas. Often a partner with significant expertise is enlisted to help accomplish this objective. In this community model, the public may be served by a combination of public and private institutions partnering and working collaboratively to install, support and maintain broadband infrastructure used to serve the changing needs of the community.

291: Identifying Unserved Areas by Census Block

"The use of census blocks should also facilitate the use of NTIA's nationwide broadband map to identify areas eligible for funding. We propose to define Unserved areas based on the data

collection initiated by the Broadband Data Improvement Act and funded through the State Broadband Data and Development Grant Program (SBDD); the first data from that effort are due to be made public by February 17, 2011. We seek comment on how we should define served and unserved areas using that data; we ask commenters to examine the National Broadband Map once it becomes available and to provide comment on how we can best use the data available, consistent with our goals. What criteria should we use to determine whether an area should be considered “unserved” for purposes of the first phase of the CAF? Should it be the same as any criteria used in the NTIA map? How should we account for potential limitations in the data? We recognize that, while data are first due to be made available in February 2011, NTIA’s data collection is ongoing and so we propose using the most recent data available at the time of our auction. In the alternative, should we rely on Commission data obtained from an updated Form 477? How should we define served and unserved census blocks using these alternative data? We seek comment on these possible methods of identifying unserved census blocks and whether any workable alternatives would be more appropriate in connection with the first phase of the CAF.”

Recommendations:

- The FCC should evaluate the health institution’s need for broadband by the population it serves rather than the location of the health facility
- Retain the important concept of connecting the rural health institution to its urban counterpart for effectiveness and continuity of care.
- Affordability may be measured by the ‘lowest available’ rate in nearby urban areas
- Allow communities to determine their bandwidth needs and use the competitive bidding process to meet these needs

Discussion:

There is a great deal of uncertainty about the quality of the data used for the nationwide broadband map and the use of this data to determine ‘unserved’ areas eligible for the CAF program. For the Health Community, and perhaps for all community anchor institutions, it is important to focus on the populations being served by these institutions rather than the institution itself. For example, a critical care hospital in a ‘served’ area may support multiple clinics in unserved communities. The FCC itself recognized in the Rural Health Program the value of connecting the rural to the urban health communities and even to the nationwide health community. This is an important way in which the RHC program can address needs specific to health care that may be difficult to address through the CAF program that is focusing solely on the unserved areas.

Moreover, being “served” by generic broadband service of 4 Mbps is not the same as being served by broadband capable of delivering service levels required by health care. Put simply, 4 Mbps service is not sufficient for the majority of healthcare applications. For example, video conferencing and digital lab files require scalable fiber of a minimum of 10 Mbps. For larger facilities that run multiple files simultaneously, they are often requiring 100 Mbps with 24/7/365 availability. Spikes of usage when pushing a digital lab file require very high levels of availability and quality of transmission/reception. Hospital systems typically require 1 Gig of availability for their high-traffic needs. Further, to

ensure health care networks are available when they are needed most – during natural disasters or national emergencies – physical redundancy is critical.

Lives depend on health broadband. For health anchor institutions to be considered served by existing infrastructure, that infrastructure must provide high quality, high availability, and physical redundancy. This is why health care networks must be dedicated – either virtually through leased connections with guaranteed levels of service – or owned by health care facilities themselves. The existing Broadband Map data does not effectively determine the availability of facilities capable of providing such dedicated capacity. However, the best process for making such a determination already exists: the Rural Health Care pilot program’s competitive bidding process through which health care providers establish their required service levels rather than having them potentially dictated by existing providers.

Finally, it is also important to recognize that while broadband may exist at a location, it may not be affordable to the health institution that needs it. When broadband is unaffordable then its existence is irrelevant and the institution is unserved. Affordability measurement can be perplexing but the FCC’s own standard of ensuring that the rural (unserved) user pay no more than their urban counterpart may be a reasonable measure. We would encourage this to now be measured as the ‘lowest available’ rate available to the urban user.

295: Consideration of healthcare facilities in establishing “unserved units”

“We propose to use unserved housing units, identified as described above, to establish a baseline number of unserved units in each census block identified as unserved. We also seek comment on whether we should further consider unserved businesses or community anchor institutions such as schools, libraries, other government buildings, health care facilities, job centers, or recreation sites in determining the number of unserved units in each census block to be used for assigning support. Would using such additional factors in determining the unserved units in each area better represent the public benefits of providing new access to broadband service? Are there additional or different types of anchor institutions in Tribal lands that should be considered in such an analysis? We ask that commenters address how we should measure the factors we propose as well as any other factors they advocate, and how coverage for one type of unit, such as a work site, should compare with coverage for other units, such as housing units. We also seek comment on how we would obtain the necessary data to be able to determine with a sufficient level of accuracy the number of businesses and other institutions in a given area.”

Recommendations:

- The FCC should use the most detailed information available to evaluate areas eligible to receive support
- The FCC should focus on the benefits to those being served by the anchor institution rather than the location of the institution

- The FCC should avoid building silo networks but ensure expedient deployment

We applaud the FCC staff for the approach of using housing units as the unit of measure. Aggregation to block, tracts or higher, loses the detail so important to understanding the availability of broadband service. We encourage the FCC to maintain the finest level of detail when examining the availability of broadband.

We also reiterate the need to focus on the users of the community anchor institution rather than solely focusing on the anchor institution's broadband availability. Serving patients in rural areas from urban institutions is an important resource but ensuring that the broadband requirements are in place to accomplish this is often an economic stress point or impossibility without significant subsidy. CAF should seek to serve unserved and underserved citizens in an inclusive manner by providing high quality broadband services at affordable rates.

The CAF should allow communities to build and participate in broadband infrastructure projects that provide both urban and rural endpoints. Urban endpoints are critical to provide needed services and to contribute matching funds.

This community approach provides improved cost and benefit leverage and matching funds to support infrastructure projects that cover greater rural geographies with broadband. Experience at Hospital Systems Health System shows that in rural areas of Illinois and Wisconsin reliable quality broadband connectivity is critical to expanding referral centers to create greater healthcare access. If urban endpoints are excluded, the resources and knowledge of urban stakeholders are also excluded to assist unserved rural areas. They also require broadband connectivity to allow urban hospitals to serve rural clinics and critical access hospitals with radiologists, telemedicine and other integrated services. Healthcare reform requirements necessitate increases in the ability to provide quality primary care in rural areas to a greater population of patients. Telemedicine is an important key to providing primary care in rural areas and requires broadband connectivity and both urban and rural endpoints.

395: Middle mile costs

“A number of parties have suggested that middle mile costs are a significant component of the costs of serving customers in rural areas. The National Broadband Plan observed that “[i]t is not clear whether the high costs of middle-mile connectivity in rural areas are due solely to long distances and long population density, or also reflect excessively high special access prices as some parties have alleged.” We seek comment on whether to modify our universal service rules to provide additional support for middle mile costs. If we were to do so, how could we ensure that support is provided for middle mile circuits that are offered on rates, terms, and conditions that are just and reasonable? Further, we observe that in the absence of universal service support for middle mile costs, some small carriers have cooperatively developed regional

networks to provide lower cost, higher capacity backhaul capability. What effect would middle mile support have on incentives for small carriers to continue to seek such efficiencies?”

Recommendation:

- The FCC should focus on the needs of the community and support their approach to meeting the broadband needs
- Traditional and non-traditional solutions; middle mile and last mile solutions should be supported

Discussion:

Middle mile broadband capabilities were the focus of most of the Broadband Technologies Opportunity Program (BTOP) and the CAF should not duplicate those resources. Unfortunately, in spite of the BTOP expenditures much of the U.S. is still in critical need of middle mile broadband resources. There is also no single answer as to how these middle mile resources should be developed or provided. The community to be served is usually the best position to determine the most efficient and effective means of accomplishing this. The essential factor is an open competitive proposal process with the community leadership (carrier support but not leadership should be allowed).

Thus, the CAF should support traditional and non-traditional solutions and provide a level playing field in all markets. It is best to recognize the importance of local control in finding broadband solutions that best fit local needs. This acknowledges that one size does not fit all and that a grassroots approach to broadband deployment in rural areas must deploy a model to create sustainable “organic” growth to serve all public and private stakeholders and create a broadband ecosystem that benefits all stakeholders. This holistic strategy avoids “silos” and instead creates shared infrastructures that can achieve synergies with the connectivity objectives articulated for schools, libraries, city/county government, and health care facilities. Under this model, funding supports a consortium of stakeholders with a common need.

In some rural and unserved areas of the country, the public will be best served by using traditional telecommunication carriers to provide broadband services and in some areas investing in infrastructure (fiber) will better serve the community. It is important that both models be supported with CAF funding.

In summary, there is no one model that is best for every section of the country. The FCC should allow single or multiple providers and or invest in infrastructure depending on the needs and capabilities of the community.

“To the extent we decide to support a single provider through the CAF, we seek comment on whether (and if so, how) that would impact the operation or effectiveness of the Commission’s E-rate, Rural Health Care, and low-income programs. For instance, would funding only one CAF provider per geographic area, at most, reduce the number of carriers that bid to provide services to schools, libraries, and health care providers eligible for funding from the E-rate or Rural Health Care programs?”

Recommendation:

- The FCC should focus on the needs of the community and support their approach to meeting the broadband needs

Discussion:

The FCC is encouraged to focus its programs on the needs of the community and allow them to determine them to decide on the user of the carriers. Open competitive bidding is often the most effective means for the health community to acquire its broadband resources. In many instances, communities decide not to use a single carrier for broadband to help ensure reliability and competitiveness.

416: Size and role of CAF versus Rural Health Care program

“We also note that the Commission’s high-cost universal service support is only one of the four federal universal service support programs designed to advance the statutory goals of universal service. The Commission developed four universal service disbursement mechanisms – high-cost, low income, schools and libraries, and rural health care – to implement all of the statutory requirements set forth in section 254 of the Act. We seek comment on whether, in determining the size and role of the CAF, we should take into account the cumulative effect of the four support programs, acting together, to achieve the goals of universal service. Should the Commission be focused on sizing the CAF to ensure that the total universal service program, not just the high-cost program, remains at its current size?”

Recommendations:

- The FCC should ensure that access to broadband is not delayed and its most expedient means to provide access to broadband.
- The FCC should encourage community collaborations

Discussion:

Care must be taken to ensure that the CAF program does not delay or thwart the ability of the health community to take advantage of broadband resources in the U.S. There is a great need for the health community to become more efficient; to share information including images and large data sets such genomic data to provide personalized care. We understand that the Connect America Fund is intended to support these goals. We express our concern that the delay associated with the development of such a comprehensive program will be detrimental to the momentum being introduced through programs such as the Rural Health Care Pilot Program.

We encourage the FCC to maintain the proposed Infrastructure Program in the Rural Health program at least until the CAF is fully operational and can be demonstrated to be an ongoing success. We also encourage the FCC to ensure that the CAF provide balanced focus to the communities needs from it anchor institutions and that health be at least as important as the other community anchors.

CAF must allow participation of multiple anchor institutions such as schools, libraries, government agencies at all levels, and hospitals. This pooling of local resources will allow organizations that may not be able to participate individually to join together collectively to generate sufficient matching funds. To further enhance this collaboration, a mechanism is needed to allow "For Profit" organizations such as private medical clinics and businesses to also participate. This may include provisions requiring the 'For Profit' organization to pay their fair share that does not involved a subsidy from the FCC. This will further the gathering of matching funds and add to the long-term sustainability of approved projects. Under the current program, many of the funding mechanisms are distributed in verticals such as public safety, healthcare, and education losing economies of scale. It is important to accept the impact of broadband for economic development. A reasonable and fair cost allocation and participation fees across multiple sectors of society is encouraged.